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**APPLICATION  
FOR  
UNITED STATES PATENT**

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**Title: JAMB AND HEADER SURROUND FOR  
MASONRY WALL**

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**SPECIFICATION**

## **JAMB AND HEADER SURROUND FOR MASONRY WALL**

This claims the benefit of U.S. Provisional Patent Application Serial No. 60/391,333, filed June 25, 2002 and hereby incorporated by reference entirely.

### **Background of the Invention**

5                    This invention relates to masonry veneer or cavity wall construction and, more particularly, to devices used in association with window and door installations in a veneer/cavity wall system for proper transition between the window or door installation and the masonry veneer.

10                   Wall systems having a masonry exterior are typically constructed of at least one vertical layer of masonry and at least a second vertical layer of a material forming a back-up system. The back-

up system may be constructed of lumber, light gauge steel studs or of a concrete masonry unit. The masonry and back-up system are typically bonded together by horizontal metallic ties spaced apart vertically. A space is often provided in such wall systems (e.g., cavity wall systems) between the masonry and back-up system for moisture drainage. Normally, a 1 to 2 inch air space between the masonry and back-up system is adequate to provide drainage. Insulation may also be placed in the space to improve the energy efficiency of masonry buildings.

Masonry veneer, and cavity wall construction in general, has many advantages and is commonly utilized in residential and commercial construction. Problems often arise during construction, however, in maintaining a proper transition between the wall structure and window, door and other openings or discontinuities in the wall. For example, the dimensioning of the window or door frame installed in the wall is frequently different and incompatible with the thickness, geometry and dimensions of the masonry veneer or cavity wall construction. Typically the front edge of the window or door frame is offset and recessed relative to the masonry veneer. Caulk is often used along the wall jamb and header in an effort to provide a water tight seal and aesthetic transition to the window or door frame.

However, municipal building codes differ from locale to locale and different window or door frame profiles from the variety of manufacturers make predictable spacing for caulk application nearly impossible. As a result, the detailing and finishing work required for

proper installation of a window or door into a masonry veneer or cavity wall construction is typically very labor intensive, non-uniform and highly dependent upon the skill and experience of the particular contractor or tradesman performing the installation. Because of the importance and wide spread popularity of such masonry structures, a better method for proper and consistent installation of windows and doors in such construction is needed.

### **Summary of the Invention**

This invention provides a solution to these and other problems in the art and allows an efficient and reliable installation for a water tight and an aesthetically pleasing transition from the window or door frame to the masonry veneer. Generally, this invention includes a surround device installed adjacent the window frame or door frame to provide a proper transition from the frame to the wall structure. In one embodiment, the surround device has a generally L-shaped configuration with a first leg of the device being mounted to the outer face of the inner wall of the cavity wall construction and in the cavity between the spaced walls. The second leg of the surround device projects generally perpendicularly from the first leg and from the inner wall toward the outer wall adjacent the window or door frame. In one embodiment, the first leg includes a corrugated recess or channel providing air circulation, drainage and ventilation in the cavity or spacing between the inner and outer walls proximate the window or door frame.

Additionally, in one embodiment, the second leg includes a closed cell foam member in which a terminal end portion of the second leg is joined to a remainder of the second leg by a frangible connection or perforated joint. After the surround device is installed adjacent to the frame and the inner and outer wall construction is complete, the terminal end portion of the second leg is removed by being torn along the frangible joint. After the terminal end portion is removed, a recess is exposed at a juncture with the frame and the remainder of the second leg. A bead of caulk or similar finishing material is applied in the recess to provide a smooth and aesthetically pleasing transition from the frame to the wall. Additionally, the juncture between the frame and the wall is sealed by the caulk bead to inhibit and/or prevent the entry of moisture or other foreign material. Additional embodiments of the invention are also disclosed.

Advantageously, the surround device of this invention allows air into the cavity between the walls for proper drainage, ventilation and the like. Additionally, the surround device is readily adaptable for use with a wide variety of window and door frame designs and construction specifications without requiring highly skilled or specialized installation and construction techniques.

#### **Brief Description Of The Drawings**

The objectives and features of the invention will become more readily apparent from the following detailed description taken in conjunction with the accompanying drawings in which:

FIG.1 is an exemplary view of a window installation in a masonry cavity wall;

FIG. 2 is a perspective cross sectional view of a transition between the wall jamb and a window frame according to a first  
5 embodiment of this invention;

FIG. 3 is a cross sectional view taken along line 3-3 of FIG. 1 showing the transition between the wall jamb and window frame according to the first embodiment of this invention;

FIG. 4 is a cross sectional view taken along line 4-4 of FIG. 1 showing the transition between a header of the wall and window frame according to a second embodiment of this invention;

FIG. 5 is a view similar to that of FIG. 3 of an alternative embodiment of this invention prior to final installation and finishing;

FIG. 5A is a view of the region 5A of FIG. 5 after final  
15 installation and finishing; and

FIG. 6 is a view similar to FIG. 5 of a still further alternative embodiment of this invention.

### **Detailed Description of the Invention**

Referring to FIG. 1, an exemplary window installation 10 in  
20 a masonry wall 12 is shown. The window installation 10 includes a perimeter window frame 14, one or more window panes 16, and a window opening 18 in the wall defined by a pair of jambs 20 and a header 22 above and a sill 24 below the window frame 14. Although

one example of a window installation is shown in FIG. 1, this invention is readily applicable for a variety of window installations, frame designs, doors and other openings or interruptions in the masonry wall.

As shown more clearly in FIGS. 2-4, the masonry wall 12 for the exterior of a building, in one embodiment, is comprised of an outer wall of masonry or brick veneer 26 and an insulated interior wall 28. The brick veneer outer wall 26 is constructed from a plurality of bricks or blocks 30 arranged in a vertical pattern. Each brick 30 is of a substantially rectangular shape having a uniform length, height and depth. The brick veneer 26 is built up by placing one layer of bricks 30 over another layer, with the upper layer vertically offset from the lower layer by a distance of approximately one-half the length of a brick 30. Thus, as shown in FIG. 1, a brick 30 on one layer is positioned directly over the space between two bricks 30 on the layer immediately beneath it. The spaces between adjacent bricks 30 and between adjacent layers of bricks are filled with mortar 32. Alternatively, the veneer 26 may be stone or other masonry components.

The interior wall 28 includes wood framing studs 34, dry wall 36, and outer sheathing material 38. Other materials may be used as is well known in the art. For example, a liner board (not shown) as disclosed in U.S. Patent Application Serial No. 10/417,761 filed April 17, 2003 and hereby incorporated by reference, may be used on the outer sheathing material 38. In any event, the building wall 12 is constructed so that there is a small cavity or airspace A between the back side of the

brick veneer 26 and the outer surface of the interior wall 28. The airspace A between the back side of the brick veneer 26 and the surface of the interior wall 28 is usually at least about one to two inches deep, although the exact dimension may vary depending upon the nature of the construction.

Referring to FIGS. 2 and 3, a first embodiment of a jamb/header surround device 40 is shown installed in the wall 12 to provide a proper transition from the window frame 14 to the wall 12. The jamb/header surround 40 of FIGS. 2 and 3 is installed in the jambs 20 of the window opening 18 adjacent to the corresponding portions of the window frame 14. In the first embodiment, the jamb/header surround 40 is generally L-shaped, in which a first leg 42 of the surround 40 confronts an outer face of the inner wall 28, and a second leg 44 of the surround 40 projects generally perpendicular to the plane of the wall 12 and is juxtaposed to the outer wall or veneer 26 at the window opening 18 to provide a transition from the window frame 14 to the wall 12. As is readily apparent, particularly from FIG. 3, the forward-most edge 46 of the window frame 44 is recessed relative to the front face of the wall 12 and particularly, the veneer 26. Therefore, a proper transition from the window frame 14 to the wall 12 that is effectively sealed against wind, rain, and other elements as well as aesthetically pleasing is often difficult. The wide variety, sizes and configurations of window frames 14 available from various manufacturers increases the complexity and difficulty with providing a proper transition from the window frame 14 to

the wall 12. Nevertheless, the jamb/header surround 40 of this invention provides a solution.

As shown in FIGS. 2 and 3, a nailing flange 48 is typically provided from the portion of the window frame 14 adjacent the jamb 20 and extending to the outer surface of the inner wall 28. Nails or other mechanical fasteners (not shown) are inserted through the leg 42 of the surround 40 and through the nailing flange 48 into the sheathing material 38, thereby securing the window frame 14 and surround 40 in position. The leg 44 of the surround 40 projects perpendicularly from the inner wall 28 to provide a proper transition and support for caulking.

Specifically, one tab 50 projects generally perpendicularly from the leg 44 to the nailing flange 48 and window frame 14 as shown in FIGS. 2 and 3. The tab 50 is preferably spaced from the juncture between the legs 42, 44 of the surround 40 as well as from the forward-most edge 46 of the frame 44. As such, the tab 50 defines a recess 52 between the leg 44 and the frame 14. A standard backer rod 54 which is typically foam or similar material is inserted in front of the tab 50 in the recess 52 and a bead of caulk 56 is applied between the frame 14 and the leg 44 of the surround 40 to provide a proper finished transition from the frame 14 to the surround 40, and thereby substantially cover and seal the recess 52.

Additionally, a tab 58 projects from the leg 44 of the surround in the opposite direction from the tab 50 and toward the outer wall 26. The tab 58 is preferably spaced from the terminal edge of the

leg 44 to thereby define a recess 60 with the leg 44 and the veneer 26. A bead of caulk 62 is applied in the recess 60 to substantially seal the juncture from the surround 40 to the outer wall 26 and provide an aesthetically pleasing presentation to the window installation 10.

5                   The jamb/header surround 40 also allows for expansion and contraction of the window frame 14 relative to the wall 12 during a variety of climatic conditions. In one embodiment, the leg 44 bends or deflects in a region near the tab 50 to accommodate expansion and contraction of the wall 12 relative to the frame 14. In combination with  
10                   the beads of caulk 56, 62 and the backer rod 54, the jamb/header surround 40 of this invention provides for a durable, reliable, easily installed and sealed transition from the window frame 14 to the wall 12. In presently preferred embodiments, the jamb/header surround 40 is preferably extruded from a variety of thermoplastic or other polymeric  
15                   materials. Alternatively, the jamb/header surround 40 may be aluminum or other materials resistant to rust and weather.

                  In presently preferred embodiments of the invention, the leg 42 of the jamb/header surround 40 is approximately 2" in length and 0.25" thick; whereas the leg 44 is approximately 1.75" in length and  $\frac{1}{8}$ "  
20                   thick. The tab 50 is spaced approximately  $\frac{3}{8}$ " from the juncture between the legs 42, 44 and is approximately  $\frac{1}{8}$ " thick and  $\frac{1}{4}$ " long. The tab 58 is spaced approximately  $\frac{1}{4}$ " from the terminal edge of the leg 44, is approximately  $\frac{1}{4}$ " thick and  $\frac{1}{4}$ " long. Alternative embodiments of the jamb/header surround 40 include a tapered or narrowed region of the leg

44 to provide for added flexibility during expansion/contraction of the elements at the window installation 10.

Referring to FIG. 4, a second embodiment of the jamb/header surround 40, according to this invention, is shown installed along the header 22 of the window opening 18. The embodiment of the surround 40 shown in FIG. 4 does not include the tab 50, so that the leg 44 is juxtaposed directly against the nailing flange 48 of the window frame 14 at the header 22 of the window installation 10. The tab 58 is spaced from the terminal edge of the leg 44 and projects towards the veneer 26 to contact a generally L-shaped angle iron or channel 64 which is commonly positioned on the outer wall 26 at the window header 22 to provide added support for the masonry veneer 26. The bead of caulk 62 is applied in the recess 60 formed by the tab 58, leg 44 and channel 64.

Referring to FIGS. 5 and 5A, a further alternative embodiment of the jamb/header surround device 40 according to this invention is shown installed along the jamb 20 of a window frame 14 to provide a proper transition to the wall 12. In this embodiment, the jamb/header surround device 40 is generally L-shaped in which a first leg 42 of the surround device 40 is mounted to and confronts the outer face of the inner wall 28, and a second leg 44 of the surround device 40 projects generally perpendicular to the plane of the wall 12 and is juxtaposed to the frame 14 at the window opening 18 to provide a transition from the frame 14 to the wall 12. As is readily apparent,

particularly from FIGS. 5 and 5A, the forward most edge 46 of the window frame 44 is recessed relative to the front face of the wall 12 and, particularly, the veneer 26. Therefore, a proper transition from the window frame 14 to the wall 12 that is effectively sealed against wind, rain and other elements, as well as aesthetically pleasing, is often difficult to achieve. The wide variety, sizes and configurations of window and door frames available from various manufacturers increases the complexity and difficulty with providing a proper transition from the frame 14 to the wall 12. Nevertheless, the jamb/header surround device 40 of this invention provides a solution.

Nails or other mechanical fasteners (not shown) are inserted through the first leg 42 of the surround device 40 and into the sheathing board 38 to thereby mount the device 40 to the wall 28 adjacent the opening 18. Preferably, the first leg 42 is nailed, screwed or otherwise fastened to the sheathing board 38 approximate the stud 34 for secure mounting and attachment. A corrugation or other channel or recess 66 extends vertically along the first leg 42 of the surround device 40 in one embodiment of this invention. Advantageously, the corrugation 66 allows for air circulation in the cavity A between the spaced walls 26, 28. In one presently preferred embodiment, the channel has a depth of approximately 3/8" and a length of approximately 1.5". Moreover, the first leg 42 of the surround device 40 when mounted to the sheathing material 38 is preferably mated with an air circulation board or liner (not shown) such as that disclosed in U.S. Patent

Application Serial No. 10/417,761, filed April 17, 2003 and hereby incorporated by reference.

The second leg 44 of the surround device 40 projects generally perpendicular to the first leg 42 adjacent to the frame 14. As shown in FIG. 5, the second leg 44 in one embodiment is approximately 3/8" thick and 1.75" in length. Preferably, the second leg 44 is constructed of closed cell foam and includes a terminal end portion 68 joined to a remainder 70 of the second leg 44 by a frangible connection 72 such as a series of perforations to provide for the convenient and easy removal of the terminal end portion 68 from the remainder 70 of the second leg 44. The second leg 44 may include multiple spaced connections 72 for use with a variety of configurations. The second leg 44 is preferably adhered to a flange 74 of the first leg 42 with an industrial adhesive or other means. Preferably, the flange 74 of the first leg 42 extends approximately 0.75" and the remainder 70 of the second leg 44 likewise has a length of about 0.75".

In one embodiment, a portion of the first leg 42 between the corrugated channel 66 and the second leg 44 is approximately 1.25" and the terminal end portion 68 of the first leg 42 outboard of the corrugated channel 66 is approximately 7/8" in length. Alternatively as shown in FIG. 6, the first leg 42 may be generally planar and preferably extend only about 1" and not include the corrugated channel for use in either non-cavity or cavity wall construction. In one embodiment, the first

leg 42 is an aluminum or thermoplastic material commonly formed by extrusion or other techniques.

During installation of the surround device 40 and in construction of the cavity wall 12, the inner wall 28 is constructed with an opening 18 for the window, door or other installation. The frame 14, is inserted into the opening 18 and the surround device 40 is mounted to the sheathing material 38 of the inner wall 28 as previously described. Next, the outer veneer wall 26 is constructed with courses of masonry units 30 and mortar 32. Preferably, a region B in the spacing A between the veneer wall and the inner wall 28, with the exception of the corrugation channel 66, is filled with mortar 32, bricks 30, masonry units or other structure to provide a stable backing to the second leg 44 of the surround device 40. After construction of the outer veneer wall 26 is completed, the terminal end portion 68 of the second leg 44 is removed along the frangible connection 72 thereby exposing a recess 76 at the juncture between the frame 14, the remainder 70 of the second leg 44, and the wall 12. As shown in FIG. 5A, the recess 76 is filled with a bead of caulk 78 to provide an aesthetically pleasing transition from the frame 14 to the wall 12, as well as sealing the juncture between the frame 14 and the wall 12.

From the above disclosure of the general principles of the present invention and the preceding detailed description of at least one preferred embodiment, those skilled in the art will readily comprehend the various modifications to which this invention is susceptible.

Therefore, we desire to be limited only by the scope of the following claims and equivalents thereof.

We claim: